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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,069	09/28/2000	Yukihisa Takeuchi	789_048 NP	7280

25191 7590 08/22/2002

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EXAMINER

BUDD, MARK OSBORNE

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 08/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

672069

Applicant(s)

Takeuchi et al

Examiner

M. Budd

Group Art Unit

2834

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

3

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 7-24-02
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 3, 4, 6-41 and 68-72 is/are pending in the application.
- Of the above claim(s) is/are withdrawn from consideration.
- ☒ Claim(s) 14-41 is/are allowed.
- ☒ Claim(s) 3, 4, 6-13 and 68-72 is/are rejected.
- ☐ Claim(s) is/are objected to.
- ☐ Claim(s) are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☒ received in Application No. (Series Code/Serial Number)
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received:

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s).
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other

Office Action Summary

Art Unit: 2862

Claims 3, 4 and 6-9 are rejected under 35 USC 103 as unpatentable over Arai in view of Okawa, Kolm or Riedel and combined with Scarpa or Keem. Arai teaches the claimed structure using only a single layer of piezo electric material and no holes or recesses in the thin mounting member. However, use of plural piezo electric layers to lower impedance and/or increase output power is well known as taught by e.g. Riedel, Okawa or Kolm. Each of Scarpa and Keem teach providing a rough surface to aid in mounting the piezo electric elements to the support structure by increasing the bonding area in a known manner. Thus for these reasons it would have been obvious to one of ordinary skill in the art to provide Arai with multiple piezo electric layers and roughen the contact surface between the piezo element and the thin plate. Claims 10-13 and 68-72 are rejected under 35 USC 103 as unpatentable over Brunnee or Arai in view of Ogawa (057) or Ogawa (264). Brunne and Arai teach the transducer structure using only a single layer of piezo material. Both Ogawa references teach it is obvious to provide multiple layers with lead connections on the same surface.

Regarding applicants comments, it appears applicant interprets "opposed" in claim 7 to mean "adjacent" rather than "opposite". Thus the 35 USC 112 rejection is withdrawn.

Note claim 8 does not specify the location of any holes or recesses relative to the piezo element. It only notes that they exist in the thin member. Note e.g. screw in prior art Brunnee.

Due to the newly cited art the rejections are **NOT FINAL**.

Application/Control Number: 09/672,062

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M BUDD/pj

08/19/02

MARK U. BUDD
PRIMARY EXAMINER
ART UNIT 212